

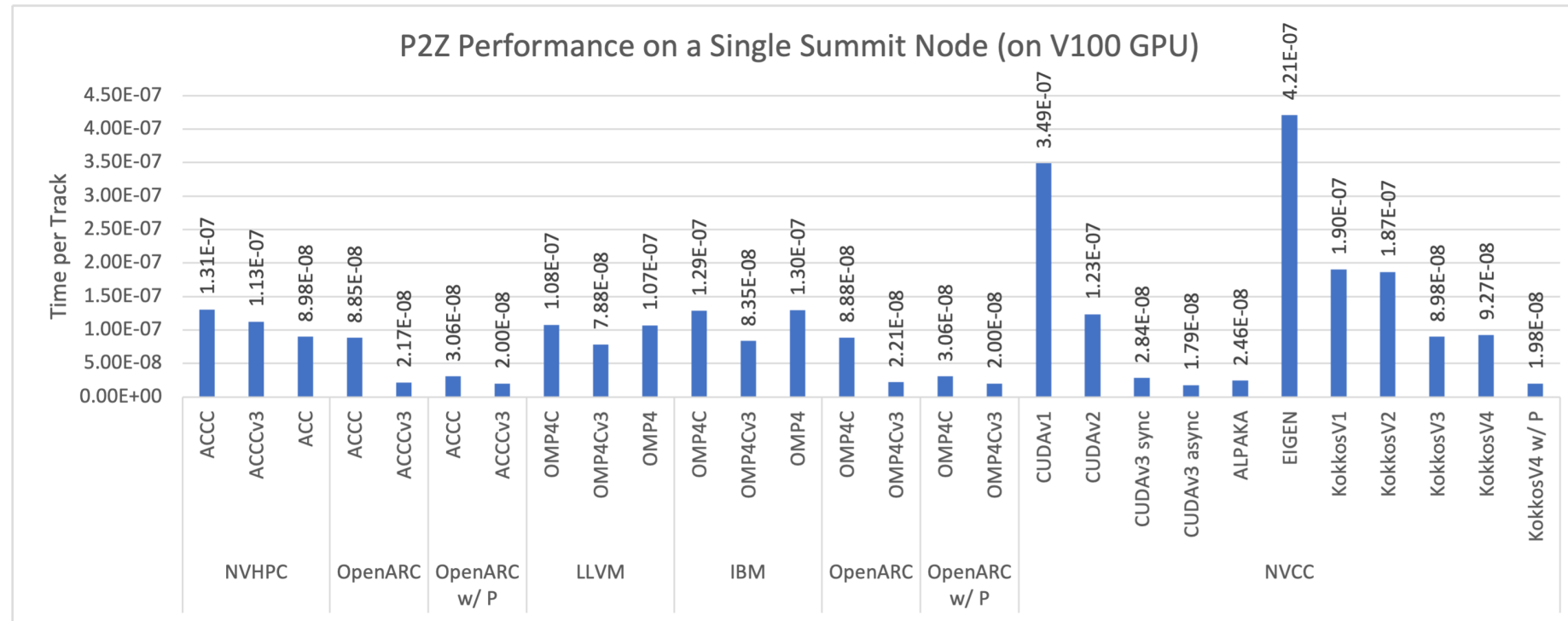
P2Z GPU Version Performance on Summit

Seyong Lee

Oak Ridge National Laboratory

August 15, 2022

P2Z GPU Version Performance on a Summit Node



- **ACCC**: OpenACC C sync version
 - **ACCCv3**: OpenACC C async version
 - **ACC**: OpenACC C++ sync version
 - **OMP4C**: OpenMP4 C sync version
 - **OMP4Cv3**: OpenMP4 C async version
 - **OMP4**: OpenMP4 C++ sync version
 - **CUDA v1**: CUDA unified memory version (no shared memory)
 - **CUDA v2**: CUDA sync version (no shared memory)
 - **CUDA v3 sync**: CUDA V3 sync version
 - **CUDA v3 async**: CUDA V3 async version
 - **KokkosV1**: CUDA unified memory
 - **KokkosV2**: same patterns as KokkosV1 but with explicit memory transfers
 - **KokkosV3**: same patterns as CUDA v3 sync but w/o host memory prepinning
 - **KokkosV4**: same patterns as CUDA v3 async version
- Compilers:** NVHPC (V22.5), OpenARC (V0.73), LLVM (V15.0), IBM (V16.1.1), and NVCC (V11.0) (**w/ P** : with host memory prepinning) (All CUDA versions are w/ P)